Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A method to equalize signals transmitted on a line, the method comprising:

applying in series with said line, an analog adaptive filter having a working frequency band, a pole, and a zero, the pole and zero each having a position in said working frequency band that is variable in response to attenuation of said line;

applying to an output of said filter a retroaction circuit able to vary the position of said pole and said zero;

setting said pole and zero in correspondence to an initial frequency of said working frequency band;

moving the position of said pole toward high frequencies at an increasing of said attenuation of said line; and

moving the position of said zero toward low frequencies at the increasing of said attenuation of said line.

2. (Previously Presented) A method in accordance to the claim 1 wherein the pole and zero are a first pole/zero couple and the initial frequency is a first initial frequency, the method further comprising:

positioning a second pole/zero couple of said analog adaptive filter at a second initial frequency in said working frequency band, wherein said first initial frequency is greater than said second initial frequency and the second pole/zero couple includes a pole and a zero;

uniformly spacing said first and second initial frequencies along a logarithmic axis in said working frequency band;

moving the poles of said first and second pole/zero couples toward the high frequencies at the increasing of said attenuation of said line; and

moving the zeros of said first and second pole/zero couples toward the low frequencies at the increasing of said attenuation of said line.

3. (Previously Presented) A method in accordance to the claim 2 wherein moving the poles and zeros of the first and second pole/zero couples include first moving the pole and zero of the first pole/zero couple and in succession moving the pole and zero of the second pole/zero couple at the increasing of said attenuation of said line.

4. (Previously Presented) A method in accordance to the claim 1 wherein said pole and zero are placed in working frequency band in correspondence of said initial frequency in order to equalize the attenuation of said line when said line has null attenuation.

5. (Original) A method in accordance to the claim 1 wherein said pole and said zero are moved approximately 30% compared to their initial position.

6. (Previously Presented) A method in accordance to the claim 1, further comprising increasing a continuous gain of said adaptive filter after moving the position of said pole and zero.

7. (Original) A method in accordance to the claim 1 wherein said retroaction circuit includes a compensation circuit that compensates for thermal and constructive variations.

8. (Currently Amended) An equalizer circuit of signals transmitted on a line having an attenuation comprising:

an analog adaptive filter coupled in series with said line and including plural transconductance filters and a plurality of pole/zero couples, each transconductance filter having a respective bias current~~,~~ and a pole/zero couple, each pole/zero couple having~~and~~ a zero and a

pole, the pole and zero of each pole/zero couple having a respective position in frequency in a working band that is variable in response to said respective bias current; and

a retroaction circuit coupled to an output of said adaptive filter and able to vary said respective bias currents, each bias current varying at a varying of said attenuation of said line; wherein each bias current of said plural transconductance filters has an initial value and is made to vary at an increase of said attenuation so that said pole of the transconductance filter having the bias current is moved toward high frequencies and said zero of the transconductance filter having the bias current is moved toward low frequencies.

9. (Currently Amended) An equalizer circuit in accordance to the claim 8 wherein:

said analog adaptive filter includes four transconductance filters~~ each having a bias current each with two couples of poles and of zeros, the poles and zeros each having a position in frequency in a working band that is variable in response to said bias current~~;

said~~ two couples of~~ poles/zeros couples are spaced ~~are placed having a~~ uniformly along a logarithmic axis~~spacing~~ in said working frequency band;

said bias current is made to vary so that said poles of said pole/zero couples are moved toward the high frequencies at the increasing of said attenuation of said line; and

said bias current is made to vary so that said zeros of said pole/zero couples are moved toward the low frequencies at the increasing of said attenuation of said line.

10. (Previously Presented) An equalizer circuit in accordance to the claim 8, further comprising a bias generating circuit able to modify said bias currents in response to temperature variations.

11. (Original) An equalizer circuit in accordance to the claim 8 wherein the equalizer circuit is realized in CMOS technology.

12. (Canceled)

13. (Previously Presented) An equalizer for signals transmitted on a line having an attenuation, the equalizer comprising:

an adaptive filter including:

an input coupled to an input portion of the line;

an output coupled to an output portion of the line;

a first transconductance filter having a bias input at which a first bias current is produced; and

a second transconductance filter having a bias input at which a second bias current is produced;

a line attenuation detector coupled to the output of the adaptive filter and structured to detect attenuation in the line; and

a variable bias generator having an input coupled to the line attenuation detector, a first output coupled to the bias input of the first transconductance filter, and a second output coupled to the bias input of the second transconductance filter, the variable bias generator being structured to vary the first and second bias currents in response to receiving an indication from the line attenuation detector that the attenuation has changed, wherein the variable bias generator includes:

an input transistor having an input terminal coupled to the line attenuation detector, a first conduction terminal, and a second conduction terminal coupled to a first reference voltage;

a first current mirror having a first leg coupled to the first conduction terminal of the input transistor and a second leg; and

a second current mirror having a first leg coupled to the second leg of the first current mirror and a second leg coupled to the bias input of the first transconductance filter.

14. (Original) The equalizer of claim 13 wherein the variable bias generator includes:

a connecting transistor having an input terminal coupled to a second reference voltage, a first conduction terminal, and a second conduction terminal coupled to the first conduction terminal of the input transistor; and

a third current mirror having a first leg coupled to the first conduction terminal of the connecting transistor and a second leg; and

a fourth current mirror having a first leg coupled to the second leg of the third current mirror and a second leg coupled to the bias input of the second transconductance filter.

15. (Original) The equalizer of claim 13 wherein the variable bias generator further includes:

a third current mirror having a first leg that includes the first and second current mirrors and a second leg on which a reference current is produced.

16. (Original) The equalizer of claim 15 wherein the variable bias generator includes a bias transistor having an input terminal, a first conduction terminal coupled to the second leg of the third current mirror, and a third conduction terminal coupled to the first reference voltage, the equalizer further comprising:

a bias generator coupled to the input terminal of the bias transistor, the bias generator being structured to compensate the bias current against temperature changes.

17. (Original) The equalizer of claim 16 wherein the bias generator includes:

a differential couple having an output; and

a fourth current mirror having a first leg coupled to the output of the differential couple and a second leg coupled to the input terminal of the bias transistor.

18. (Previously Presented) An equalizer for signals transmitted on a line having an attenuation, the equalizer comprising:

an adaptive filter including:

an input coupled to an input portion of the line;

an output coupled to an output portion of the line;

a first transconductance filter having a bias input at which a first bias current is produced; and

a second transconductance filter having a bias input at which a second bias current is produced;

a line attenuation detector coupled to the output of the adaptive filter and structured to detect attenuation in the line;

a variable bias generator having an input coupled to the line attenuation detector, a first output coupled to the bias input of the first transconductance filter, and a second output coupled to the bias input of the second transconductance filter, the variable bias generator being structured to vary the first and second bias currents in response to receiving an indication from the line attenuation detector that the attenuation has changed;

a charge pump having an input connected to the line attenuation detector and an output connected to the variable bias generator; and

a capacitor connected between the output of the charge pump and a reference voltage.

19. (Previously Presented) An equalizer for signals transmitted on a line having an attenuation, the equalizer comprising:

an adaptive filter including:

an input coupled to an input portion of the line;

an output coupled to an output portion of the line;

a first transconductance filter having a bias input at which a first bias current is produced; and

a second transconductance filter having a bias input at which a second bias current is produced;

a line attenuation detector coupled to the output of the adaptive filter and structured to detect attenuation in the line;

a variable bias generator having an input coupled to the line attenuation detector, a first output coupled to the bias input of the first transconductance filter, and a second output coupled to the bias input of the second transconductance filter, the variable bias generator being structured to vary the first and second bias currents in response to receiving an indication from the line attenuation detector that the attenuation has changed; and

a comparator having a first input coupled to the output portion of the line, a second input coupled to a voltage reference, and an output coupled to the line attenuation detector.

20. (Original) The equalizer of claim 19 wherein the line attenuation detector includes:

a NOR gate having first and second inputs and an output;

a first bistable circuit having a first input coupled to the output of the comparator and to the second input of the NOR gate, a second input coupled to the output of the NOR gate, and an output coupled to the first input of the NOR gate; and

a second bistable circuit having an input coupled to the output of the first bistable circuit and an output coupled to the variable bias generator.

21. (Previously Presented) A method to equalize signals transmitted on a line, the method comprising:

coupling to the line, an analog adaptive filter having a working frequency band, a pole, and a zero, the pole and zero each having a position in the working frequency band that is variable in response to attenuation of the line, and the pole and zero each having an initial frequency;

moving the position of the pole toward high frequencies at an increasing of the attenuation of the line; and

moving the position of the zero toward low frequencies at the increasing of the attenuation of the line.

22. (Previously Presented) The method of claim 21 wherein the pole and zero are a first pole/zero couple and the initial frequency is a first initial frequency, the method further comprising:

positioning a second pole/zero couple of the analog adaptive filter at a second initial frequency in the working frequency band, wherein the first initial frequency is greater than the second initial frequency and the second pole/zero couple includes a pole and a zero;

positioning a third pole/zero couple of the analog adaptive filter at a third initial frequency in the working frequency band, wherein the second initial frequency is greater than the third initial frequency and the third pole/zero couple includes a pole and a zero;

uniformly spacing the first, second, and third initial frequencies along a logarithmic axis in the working frequency band;

moving the poles of the first, second, and third pole/zero couples toward the high frequencies at the increasing of the attenuation of the line; and

moving the zeros of the first, second, and third pole/zero couples toward the low frequencies at the increasing of the attenuation of the line.

23. (Previously Presented) The method of claim 22 wherein moving the poles and zeros include first moving the pole and zero of the first pole/zero couple and then moving in succession the poles and zeros of the second and third pole/zero couples at the increasing of the attenuation of the line.

24. (Currently Amended) The method of claim ~~11~~21, further comprising increasing a continuous gain of the adaptive filter after moving the position of the pole and zero.

25. (Previously Presented) The equalizer of claim 18 wherein the charge pump includes:

a p-channel transistor having a gate coupled to the line attenuation detector, a source coupled to a supply voltage, and a drain coupled to the capacitor; and

an n-channel transistor having a gate coupled to the gate of the p-channel transistor, a drain coupled to the drain of the p-channel transistor, and a source coupled to the reference voltage.